Science Flight Report
Operation IceBridge Arctic 2012

Flight: F35
Mission: Devon 01

Flight Report Summary

Aircraft	**P-3B (N426NA)**
Flight Number	36
Flight Request	12P006
Date	Friday, May 4, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Devon 01
Take off time	11:02 Zulu from Thule Air Base (BGTL)
Landing time	17:27 Zulu at Thule Air Base (BGTL)
Flight Hours	6.7 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	• Low-altitude survey (1,500) of glaciers and ice sheet profiles. • Collected data for magnetic compensation offshore. • ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.
Geographic Keywords	Devon Island, Ellesmere Island
Satellite Tracks	CryoSat-2 orbit 10976
Repeat Mission	1995, 2000, 2005, and 2011.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	☑	☒	☒	53 GB	None
MCoRDS	☒	☒	☒	1.5 TB	None
Snow Radar	☑	☒	☒	553 GB	None
Ku-band Radar	☑	☒	☒	553 GB	None
Accumulation Radar	☑	☒	☒	140 GB	None
DMS	☑	☒	☒	35.5 GB	None
KT-19 Skin Temp.	☑	☑	☑	8 MB	None
Gravimeter	☑	☑	☑	1.5 GB	None
Magnetometer	☑	☑	☑	450 MB	None

Mission Report (Michael Studinger, Mission Scientist)

This mission repeats survey lines over the Devon Ice Cap previously surveyed by the ATM/KU teams in 1995, 2000, and 2005, and adds several new lines over the Barnes Ice Cap. We also overfly CryoVEx field sites on the Devon Ice Cap. These include the "623" line, the May 3rd CryoSat-2 overpass (corresponding to the May 1st pass from 2011), and the April 22nd pass (corresponding to April 20, 2011). Of these two the May 3rd overpass is the primary line. We also surveyed two glaciers on southern Ellesmere Island. The CryoSat-2 orbit with the corner reflectors was surveyed by the DTU Twin Otter with the ASIRAS radar yesterday.

The forecast for the area and satellite images were perfect.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in mostly cloud free conditions. ATM collected a total of 5.1 hours of science data with 98% coverage.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars worked well.

Accumulation radar: Worked well today.

Gravimeter: Worked well.

Magnetometer: Worked well and used the SGL data logger today without problems.

DMS: DMS worked well.

KT-19 skin temperature sensor: System worked well.

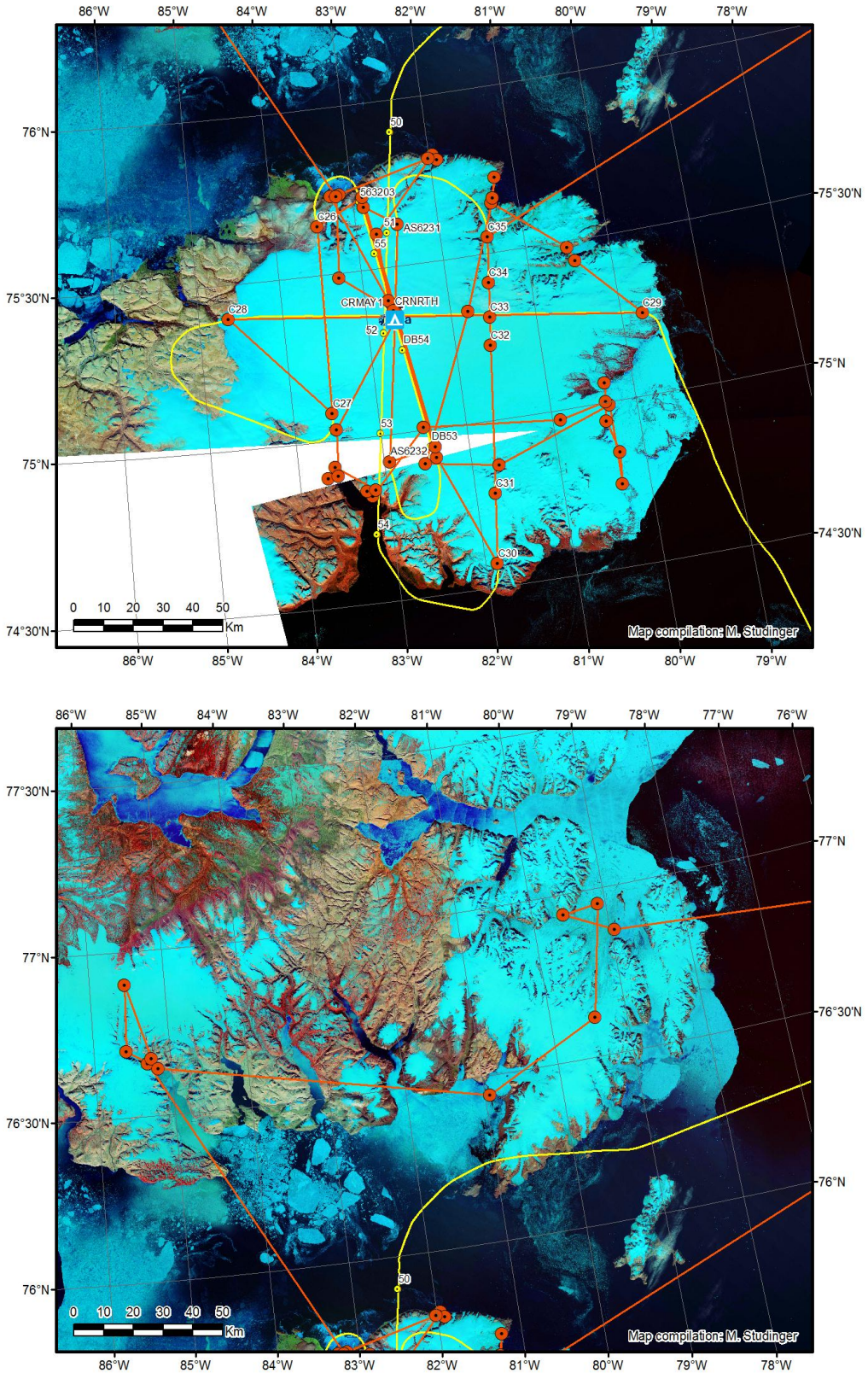

Figure 1: Today's mission plan in red. Yellow marks last year's flight.